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Mini Review

Knee Sanguine Effusions in Sports Trauma (Haemarthrosis)

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ABSTRACT

Increased effusions or accumulations of fluid in the knee joint can be the result of trauma, excessive overload of the knee (overuse) or a consequence of systemic diseases. From the point of view of linking intra-articular effusions, especially hematic ones, with competitive or amateur sports activity, this phenomenon is more common than diagnosed. The fact that many athletes suffer from a lack of performance of their knee joints, talks about untreated injuries in accidents and previously suffered in sports activities or not at all. The other side of the problem is related to the purpose of presenting this material, the first in the Albanian professional literature, even as an obligation and scientific reflection of this common phenomenon in sports activities, which should be evaluated very seriously after hematic accumulation, or haemarthrosis, is just the tip of the iceberg while others are hidden and need to be identified and treated.

Keywords: Trauma; Haemarthrosis; Sanguine effusions; Anatomo-pathological

INTRODUCTION

In the anatomo-pathological sense a knee which after a trauma has accumulated blood in different amounts, is an important clinical sign to make an accurate diagnosis and formulate a plan based on the diagnosis and treatment of possible damage to intra-articular, structures ranging from solid structures, such as bone, or even soft ones such as articular capsule ruptures, ligament damage, other fibro-cartilaginous structures or menisci. Intra-articular hematic accumulation in the athlete's knee, even without damage to the above structures, is a dangerous potential for the athlete's future, especially in reducing the volume of movements, installing arthritic changes or other anatomical changes are unsuitable for the athlete's knee. The most common causes of intra-articular accumulations in the traumatized knee of an athlete are injuries of the articular capsule which is very filled in vascular structures, which irrigate this anatomical structure with blood [1].

Despite this fact, hemarthrosis undoubtedly masks other important injuries of the knee strengthening ligaments, fractures of bone structures such as the patella, articular surfaces of the tibia or femoral condyles, ruptures of articular cartilage or meniscus, etc.

SPECIFIC SPORTS OVERVIEW OF THE PROBLEM

The most common mechanism that affects the installation of a haemarthrosis in the knee joint is its twisting being the knee in flexion. Although many athletes who have suffered this injury do not remember and are not sure in their explanations what the cause was and how it came to pass that afterwards the knee was swollen, and the pain came increasing. Acute traumatic hemarthrosis is indicative of a very serious potential damage to the reinforcing structures of the knee and the entire clinical picture develops within the first 12 hours after injury [2,3]. Examination of a swollen, painful knee joint is very difficult and unsuccessful in carrying out a diagnosis plan regarding possible intra-articular injuries. Intra-articular hematic accumulation in the athlete's knee, even without damage to the above structures, poses a dangerous potential for the athlete's future. This potential is related to the following situations:

Packing the volume of movements

Hypotrophy of quadriceps femoris

Installing arthritic changes

Cracking of the articular cartilage

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All of these consequences play a very negative role not only in early post-traumatic performance, but these consequences will eventually be amplified and the end result will be an endoprosthetic knee replacement, while sports activity will take place with a knee and with a performance not at all favorable for sports activity. This activity, after a knee injury will certainly not be realized absolutely with the opportunities presented by the athlete as before the trauma [4].

PURPOSE OF THE WORK

In this retrospective material we have as main goal to present competitive athletes who have suffered traumatic knee hematoma, in terms of clarifying the mechanism of initial trauma as well as in terms of clarifying the accompanying injuries and the possibilities of their subsequent treatment.

Main goal: The course and treatment of hemarthrosis and the emergency stage

Deepening research in its calming stage

Completing the treatment of athletes according to the indications

Final results

The future of athletes in sports competitions

We emphasize in advance that diagnostic arthroscopy is not yet widely used in our country for an early diagnosis of concomitant injuries of a haemarthrosis in general and in athletes in particular.

ABOUT THE STUDY

In this study material are 16 athletes who have suffered trauma to their knee during sports activity. The study period includes the years 1980-2015, so it is a period of 35 years. They are all competitive athletes with regular sports activity and training from 3 to 12 years. The mean age of the injured was 23.4 years, with a minimum age of 14 and a maximum age of 28.7 years [5]. The study is retrospective, of blood in the joint. Subsequently, with the relief of the hemarthrosis condition, the injured athletes underwent a complementary examination based on the history of the injury, later clinical signs, and radiological examination, in some of which even MRI examinations revealed damage to the soft structures of the joint of the knee. In the study material there are 13 males and 3 females. Depending on the injured party we have:

The right knee is damaged in 12 cases 75%

The left knee is damaged in 4 times 25%

This distribution with right knee injuries in 75% of cases, I think the vast majority of individuals are right-wing and more or less are individuals who use left-sided sides.

Left-handed is a rare and lucky event in sports especially in volleyball.

Divided by types of sports we found this data.

Football 7 times 44%

Basketball 4 right 25%

Volley-ball 3 right 19%

Athletics 1 case 6%

Wrestling 1 case 6%

As can be seen from the table, in contact sports these injuries are more common. In our series of 16 cases in 12 of them or 75% are in contact sports and only 4 are injuries without bodily collisions, but in sports that take place without. I think, based on logical analysis and deductions that reason is related to short positions during the realization of sports action. This action is executed in a very short time where the special precautions for its realization have not yet been fully completed. The most common trauma is the rotator cuff being the knee in flexion, but not only that, the cause of the injury, not only of hemarthrosis but also of the reinforcing structures of the joint depend on the direction, the magnitude of the force, the time extension of the vector of action causing the injury. In situations without physical contact with the opponent only one rotational force on the knee joint is enough. In our series there are 4 cases or 25% of the series taken in the study with haemarthrosis, where the latter is installed without the element of body collision [6].

In injuries where we have contact or bodily collision the knee is strained in the valgus, combined with rotational force creates the possibility of damage to the articular capsule and not only that, but the continuation of the action increases the chances of deepening the injury. In our study series there are 12 cases or 75%. From the blow, in addition to the strain of the knee in valgus but also, the femur rotates from the inside, while the tibia from the outside creating a moment of torsional forces with consequence: initially the rupture of the capsule and if the force continues will be followed by damage to other structures articular. In terms of clinical manifestations, a traumatic hemarthrosis in sports activities is manifested by:

A rapid swelling of the knee, within 6-12 hours, accompanied by:

Unbearable pain that increases

Restriction of movements and a common sensation that may be preceded by a prodrome and tingling sensation

The knee is in the position of slight flexion

Walking and leaning on the ground impossible

When pressing the patella, towards the articular space of the knee, an impression is created as if the patella is obstructed in this movement. In fact the obstruction is the amount of blood accumulated in the articular cavity, this is patellar shock syndrome or the sign of patellar baldness. Pathognomonic sign of hematic accumulations in the articular cavity. Indirect marks can also be found on the knee joint graphs. These plus and minus symptoms were encountered in all cases obtained in the study. In the first moments after the injury, calmness, elevation of the injured side and the application of cold procedures is recommended. Aspiration of blood through the classic knee puncture, in the supero-lateral pole of the patella and in

conditions of sterility [7]. This procedure is performed on all injured Immobilization in plaster for three weeks, starting the isometric contractions of quadriceps femoris In-depth studies to diagnose the possibility of the presence of soft tissue damage after calmness of hemarthrosis is based on:

Evaluation of pain

Application of provocative tests to identify damage to structures

Imaging examinations such as MRI, Ct with contrast or not

Diagnostic arthroscopic examinations

DISCUSSION

In our study series we encountered concomitant injuries in 8 cases or in -50% of the total number, from these the diagnosis of concomitant injuries was as follows. In 2 cases or in -12.5% we have encountered meniscus injuries, one athlete both menisci and in the other case the lateral meniscus. In a volleyball player who occupies 6.25% we have encountered severe knee injury with ligamentum rupture. Cruciatus anterior, cruciatus posterior ligament, rupture of the collateral medial ligament and rupture of the medial meniscus. In 2 athletes or 12.5% rupture of the ligamentum colateralis medialis and one person or 6.25% with lateral collateral ligament damage. In our study series, as mentioned above, 6 athletes or 37.5% of the total number needed surgery. Of which: 2 footballers-12.5% rupture, of the anterior cruciate ligament, 2 also footballers-12.5% rupture, of the menisci, 1 football player 6.25% rupture of the medial collateral ligament and 1 sport volleyball player-6.25% diagnostic arthrotomy where chronic injuries of the articular cartilage were found. At the end of this study we found the following data

Qualitative and successful continuation of sports activity

13 athletes or 81.25%

Simple Haemarthrosis 10 cases

Meniscectomy 2 cases

Bad rupture of medial collateral 1 case

II- Sports activity with intervals

Evil rupture anterior cruciate ligament 2 cases

III-Permanent departure from the sport:

Complex knee injury 1 cases

CONCLUSION

Traumatic haemarthrosis of the knee joint in athletes is only the external phenomenon of injury; in fact the injury is more severe and with serious consequences for subsequent sports activity. Deepening the study and identification of concomitant injuries is a primary task of the sports doctor and a hopeful request of athletes to solve their problem. Correction of accompanying injuries both surgically and conservatively is a necessity for the successful continuation of sports activity.

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